


SWBAT

get ready for Newton's
Laws test

Sep 4-7:31 AM

Welcome!!!

SECA CP Physics
Thursday 31 March 2016

PEDs with Passing 

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Room C-244

Centering
(music)

- Show me SchoolView if you want phone in class...

HOMEWORK: More Free Body Diagrams

Opening Activity: Quick Write

What steps do you need to find the net force in this situation?

$m = 10.0 \text{ kg}$

(F_{TENSION})
 $T = 40 \text{ N}$

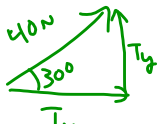
$F_{\text{net}} = 20 \text{ N}$

30°

20 N (X) -98 N (Y)
 T_x T_y

• FIND $F_{\text{GRAV}} = m \cdot g = 98 \text{ N}$

• SPLIT F_{TENSION} INTO T_x & T_y



$\sin 30^\circ = \frac{T_y}{40 \text{ N}}$
 $\cos 30^\circ = \frac{T_x}{40 \text{ N}}$

• ADD UP X FORCES $\rightarrow \sum F_x$

• ADD UP Y FORCES $= \sum F_y$

• PYTHAGOREAN THEOREM

$\sum F_x$
 F_{NET} $\sum F_y$

Sep 7-7:04 AM

What we should have solid:

Memorize our ~~8~~ vocab cards, units, vector or not, definition, formula

Be able to answer distance vs displacement questions

Be able to make measurements of real-life motion. Know what is likely to make timing things difficult and how to get more reliable timing results

Be able to convert between miles and meters, between hours, minutes, and seconds

Be able to calculate speed = dist/time and velocity = disp/time

Know what all of the symbols in the UAM equations stand for and mean

Be able to turn a UAM word problem into a list of knowns and unknowns

Be able to pick the equation with those 4 things in it

Be able to put the knowns into that equation

(Be able to solve for the unknown)

→ PROJECTILES: v_x IS CONSTANT; $a_y = -9.81 \text{ m/s}^2$ PG 42 v_y CHANGES

PG 43 TIME, Δt , CONNECTS x & y

PG 53 1ST LAW, Δt , CONNECTS x & y

PG 49 VECTORS INTO x & y , ADD VECTORS

SOH - CAH - TOA

PG 59 DIFFERENCE BETWEEN MASS & WEIGHT

PG 61 NET FORCE

PG 63 FREE BODY DIAGRAMS

$$F = m \cdot a$$

PG 70 $F_f = \mu \cdot N$

QW every day to review - gather responses to front board.

Dec 4-9:15 AM

Unit	Chapters	Date
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REFLECTION ON NOTES	2	Ed Adam Savage
HOW FAR FROM BRIDGE	4	"FORT STUEDEL"
REFLECTION ON NOTES	6	HAWK: BASIC UNITS
PE: DISTANCE & DISPLACEMENT	8	HAWK: FP DISPLACEMENT
DIAGRAM & STEPS	10	TIMING ERROR
SUMMARY OF TIMING	12	HOW TO BUILD A TABLE
PE: CONVERTING SLOWS	14	HAWK: FP CONVERSIONS
PR: VELOCITY & SPEED	16	HAWK: FP SPEED & VELOCITY
SPEED WORD PROBLEMS	18	ALGEBRA FOR PHYSICS
LAB JOURNAL 10/7	20	LAB JOURNAL 10/8
LAB JOURNAL 10/12	24	HAWK: FP GRAPH POSITION
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REVIEW FOR TEST	30	BALL ON RAMP
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MY FREE FALL LAB PROBLEM	38	3-ACT FALLING GLOWSTICK
Toy popper experiment	40	Free fall class solutions
Launched vs. Dropped	42	FP: INTRO TO PROJECTILE MOTION
PROJECTILE SIMULATOR	44	FP: PROJ. MOTION PROBLEM
PROJ'L PRACTICE PROB.	46	PROJECTILES PRACTICE
OUR VECTOR PRACTICE	48	FP - VECTOR COMPONENTS
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MEASURE LAUNCHER	52	NOTES ON FINDING v_f
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NEWTON'S 1 ST LAW	58	CONFUSING QUANTITIES
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3 RD LAW WORKSHEET	76	

Sep 5-9:09 AM

NOTE CARD VOCAB

• FORCE

• MASS
kg

• SPEED

• ACCELERATION

• INERTIA

• WEIGHT
N

Mar 30-9:52 AM

BACK OF NOTEBOOK:

"PHYSICS CODE WORDS"

MAGNITUDE: SIZE, HOW BIG

VECTORS HAVE MAG. & DIRECTION

• HORIZONTAL: SIDEWAYS, LEFT/RIGHT, X-DIRECTION

VERTICAL: UP/DOWN, Y-DIRECTION
"VERY TALL"

AT REST: VELOCITY = 0

CONSTANT SPEED/VELOCITY: BALANCED FORCES,
NET FORCE = 0

Σ : "SIGMA", SUM, TOTAL
ACCELERATION = 0
(+ & -) "NET"

Mar 30-9:46 AM

(MORE) DRAWING F.B.D.

$F = m \cdot a_{NET}$ $W = F_{GRAV} = m \cdot g$ $F_{fric} = \mu \cdot F_{normal}$

$F_{net} = 9.81 \text{ N up}$ $\sum F_x: 0$ $\sum F_y: 0$

$F_{grav} = (1.0 \text{ kg} \cdot 9.81 \text{ m/s}^2) = 9.81 \text{ N down}$

$a_x: 0$ $a_y: 0$

2.

3.

$m \cdot g = W$ $F_{GRAV} = .10 \text{ N}$

$-0.10 \text{ N} = m \cdot (-9.81 \text{ m/s}^2)$

$\frac{-0.10 \text{ N}}{-9.81 \text{ m/s}^2} = \frac{m \cdot (-9.81 \text{ m/s}^2)}{-9.81 \text{ m/s}^2}$

$m = .012 \text{ kg}$

$\sum F_x: 0$ $\sum F_y = .10 \text{ N down}$

$a_x: 0$ $a_y =$

$F_{NET} = m \cdot a_{NET}$

$0.10 \text{ N} = 0.12 \text{ kg} \cdot a$

Mar 30-9:59 AM